DEFEAT OF ANTIVACCINATION AND ANTIVIVISECTION MEASURES ON THE PACIFIC COAST.

Two initiative measures—the antivaccination constitutional amendment and the proposed antivivisection act—both menacing the public health, were defeated by the people of California at the election last November.

The antivaccination amendment declared that "No form of vaccination, inoculation, or other medication shall hereafter be made a condition for admission to or attendance in any public school, college, university, or other educational institution in this State, or for the employment of any person in any public office. The provisions of this section shall not be controlled or limited by any other provision of this constitution." This measure was actively opposed by the universities, medical schools, the State tuberculosis society, State and city boards of health, and many other influential organizations, as well as by the practicing physicians throughout the State.

The votes on these measures were as follows:

	Yes.	*No.*
Antivaccination	359,987	468,911
Antivivisection	272,238	527,130

A proposed constitutional amendment abolishing compulsory vaccination, similar to the California measure, was defeated in Oregon by a vote of 2 to 1, the final count being 63,028 for and 127,238 against.

This decisive vote is interesting in view of the fact that the proposed amendment was much more far-sweeping than a similar measure voted on four years ago, which was defeated by only 400 votes.

A vigorous campaign against the amendment was carried on by a joint committee of physicians and laymen.

PUBLIC HEALTH ENGINEERING ABSTRACTS.

Hardness of surface waters of the United States.—W. D. Collins, U. S. Geological Survey, *Journal of Industrial and Engineering Chemistry*, Vol. 12, No. 12, December, 1920, pp. 1181–1183.

The results of water analyses made by the United States Geological Survey in a general study of surface waters in the country are given in the table following.

Dissolved solids and hardness of surface waters, by States.

[Parts per million.]

State.	Dissolved solids.	Hardness as $CaCO_3$ equivalent to Ca and Mg.	Notes.
Alabama	70–90	15–40	
Arizona	500–700	200–300	100–150 Na.
Arkansas	600	200	150 Na.
California:			
Northern part	80–250	40–200	
Southern part	400–600	200–300	100 Na.
Great Basin drainage	200–200000	60–3000	Higher concentrations practically all Na salts.
Colorado	150–700	100–400	
Connecticut	50–100	25–50	
Delaware	80	40	
District of Columbia	100	40	
Florida	150	100	
Georgia	60–80	15–40	
Idaho	100–200	60–125	
Illinois	250–300	200–250	
Indiana	250–350	200–300	
Iowa	225–300	190–230	
Kansas:			
Drainage to Missouri River.	350–550	225–350	High in Na salts.
Drainage to Arkansas River.	400, 1000–2000	250, 500–800	Do.
Kentucky	100	70	
Louisiana	500	255	
Maine	20–50	5–20	
Maryland	100–150	50–75	
Massachusetts	50–60	15–25	
Michigan	250	200	
Minnesota:			
Northern	100–150	70–100	
Central and southern	250–500	200–350	
Mississippi	70–90	15–40	
Missouri	350	200	
Montana	300–600	200–300	
Nebraska	300–500	150–300	
Nevada:			
Mountainous area	100–200	30–100	
Lowland area	2000–30000	200–300	Do.
New Hampshire	20–50	5–20	
New Jersey	100–150	60–100	
New Mexico	500–3000	250–1500	
New York	100–150	50–100	
North Carolina	60–80	15–40	
North Dakota	300–800	200–600	
Ohio	250–350	200–300	
Oklahoma	1000–3000	500–1500	High Na.
Oregon	80–125	40–60	
Pennsylvania	100–150	50–100	Acid waters at some places; less in western part.
Rhode Island	30–50	5–25	
South Carolina	70–90	15–40	
South Dakota	300–800	200–600	
Tennessee	100	70	
Texas	300, 1000–2000	200, 500–1500	High in Na.
Utah	500–1000	200–300	100–250 Na.
Vermont	30–50	5–25	
Virginia	70–90	15–40	
Washington	60–125	20–60	
West Virginia	100–150	70–100	
Wisconsin	100	50	
Wyoming:			
Mountainous area	200	150	
Lowland area	800–1000	500–600	

Soft surface water is found along the Atlantic, east Gulf of Mexico, and Pacific coasts, and along the northern boundary States. Hard water is found in the middle Western States bordering the Mississippi and to the east. Hard and strongly alkaline water is found in the area outlined roughly by North Dakota, Arkansas, Louisiana, Texas, Arizona, and the southern part of California.

The disposal of trade wastes.—Robert Spurr Weston, Consulting Engineer, Boston, Mass.—*Public Works*, Vol. 49, No. 22, November 27, 1920, p. 504.

In the disposal of trade wastes the following factors should be considered: (1) Excess amounts of suspended matter; (2) suspended matter which may clog sewers; (3) excess amounts of fat and organic matter; (4) presence of mineral oil; (5) free acid; (6) presence of bacterial poisons; (7) the presence of acids resulting from the formation of carbohydrates.

At Peabody, Mass., excessive amounts of waste from tanneries, glue factories, etc., were discharged into a pump well, thence through an outfall to deep tidal water. The accumulation of suspended matter in the tank, such as spent lime, hair, strips of hide, etc., was remedied by requiring the industries to submit their wastes to subsidence before discharge into the sewer. In the more difficult cases the Dorr clarifier was used successfully to separate the suspended matter.

Wool-scouring waste is a good example of waste containing excessive amounts of fat. At Hudson, Mass., this waste was first treated in tanks of sulphuric acid. This method was found to be undesirable, owing to the formation of acid odors. Instead, the heated and settled waste was put through centrifugal machines. This process removes 50 per cent of the fats as against 95 per cent removed by the acid process.

The disposal of a paraffin-like material from fuel oils has not as yet become a difficult problem, although it causes clogging in the sewers.

Wastes from tanneries using arsenic and sewages containing free chlorine and copper salts can not be purified by bacterial action, according to experiments by Prof. C.-E. A. Winslow at New Haven. The best process used with sewage of this kind is the Miles acid process.

Experiments by Pearse and Greeley on the treatment of waste produced in the manufacture of sugar show that successive applications with lime followed by filtration in each case will render the waste suitable for discharge. No successful treatment has been worked out for taking care of waste from the manufacture of lactic acid.

In designing sewerage systems it is well to consider the industries which the system is to serve; each trade waste in itself being a problem. Although the recovery of valuable products from water-borne waste will never be a profitable business, it will minimize the cost of disposal and at the same time conserve the by-products.

Short course for water-plant operators.—V. M. Ehlers, State Sanitary Engineer, Austin, Tex., December 4, 1920.

At the request of the Texas Water Works Association, the University of Texas and the State board of health are to conduct, without charge, their second practical course of instruction on the subject of "Safe water production." This course is for municipal waterworks attendants and filter-plant operators and is to be given at Austin during the week beginning January 10, 1921. Besides the fundamental analyses required for chemical and bacteriological control of a water-treatment plant, the course will include lectures on the construction and operation of different types of purification plants and water-sterilizing apparatus, protection of water supplies, management of waterworks, and discussion of operator's individual problems. The course will include the operation of filters, liquid-chlorine apparatus, and water-softening plants.

DEATHS DURING WEEK ENDED DEC. 4, 1920.

[From the "Weekly Health Index," Dec. 7, 1920, issued by the Bureau of the Census, Department of Commerce.]

Deaths from all causes in certain large cities of the United States during the week ended Dec. 4, 1920, infant mortality (per cent), annual death rate, and comparison with corresponding week of preceding years.

City.	Population Jan. 1, 1920, subject to revision.	Week ended Dec. 4, 1920.		Average annual death rate per 1,000.[2]	Per cent of deaths under 1 year.	
		Total deaths.	Death rate.[1]		Week ended Dec. 4, 1920.	Previous year or years.[2]
Akron, Ohio	208,435	38	9.5	[3] 8.2	10.5	[3] 16.0
Albany, N. Y	113,344	26	12.0	C 19.0	3.8	C 7.3
Atlanta, Ga	200,616	70	18.2	C 16.8	17.1	C 20.3
Baltimore, Md	733,826	215	15.3	A 16.0	16.3	A 14.5
Birmingham, Ala	178,270	58	17.0	A 18.3	17.2	A 14.6
Boston, Mass	747,923	207	14.4	A 16.8	14.5	A 14.5
Bridgeport, Conn	143,152	39	14.2	A 12.6	10.3	A 13.9
Buffalo, N. Y	506,775	116	11.9	C 17.1	19.0	C 13.9
Cambridge, Mass	109,456	26	12.4	A 13.6	3.8	A 16.5
Chicago, Ill	2,701,705	587	11.3	A 13.1	14.0	A 15.3
Cincinnati, Ohio	401,247	111	14.4	C 17.2	9.0	C 9.1
Cleveland, Ohio	796,836	189	12.4	C 11.5	15.3	C 19.7
Columbus, Ohio	237,031	63	13.9	C 15.4	9.5	C 7.2
Dallas, Tex	158,976	45	14.8	A 10.6	15.6	A 6.2
Dayton, Ohio	153,830	31	10.5	C 10.0	19.4	C 20.7
Denver, Colo	256,491	73	14.8	A 15.0	5.5	.....
Detroit, Mich	993,739	227	11.9	.....	19.4	.....
Fall River, Mass	120,485	40	17.3	C 11.7	35.0	C 14.8
Grand Rapids, Mich	137,634	25	9.5	C 13.4	28.0	C 5.7
Hartford, Conn	138,036	47	17.8	.....	27.7	.....
Houston, Tex	138,276	20	7.5	.....	10.0	.....
Indianapolis, Ind	314,194	76	12.6	C 13.1	7.9	C 9.0
Jersey City, N. J	298,079	72	12.6	C 12.8	12.5	C 17.8
Kansas City, Kans	101,177	32	16.5	.....	12.5	.....
Kansas City, Mo	324,410	113	18.2	C 14.0	15.0	C 9.3
Los Angeles, Calif	576,673	164	14.8	A 13.7	7.9	A 9.5
Louisville, Ky	234,891	62	13.8	C 16.7	14.5	C 13.3
Lowell, Mass	112,479	29	13.4	A 18.1	24.1	A 20.5
Memphis, Tenn	162,351	71	22.8	C 22.3	8.5	C 10.9
Milwaukee, Wis	457,147	83	9.5	A 12.1	19.3	A 21.1

[1] Annual rates per 1,000 population.
[2] "A" indicates data for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates data for the corresponding week of the year 1919.
[3] Data are based on statistics of 1915, 1916, and 1917.